



**Re: Follow-up from yesterday's call on options for completing
Harbor Pathogen TMDLs (Boundary Con**

the NJ

Barbara Hirst to: Helen Pang, Antony Tseng

02/24/2012 08:53 AM

Cc: Jeff Gratz, Felix Locicero, Rosella OConnor, Douglas Pabst

This covers the points well, except for the last point "D", especially the "however" clause of that point. While it is certain that reality will have values over and under 35 at Dundee Dam even while attaining the 35 geomean standard, the assumption of 35 at all times is not the same as meeting the standard, it is more stringent than a geomean standard. The geomean calculation softens the effect of large numbers, so the highs could be quite a bit higher than the lowest possible low, which would be zero, and still meet a geomean; 35 at all times is consistent with meeting an arithmetic mean, which, again, is not the standard. The last point should be revised to reflect that 35 at all times would represent a condition that is better than standards, by an undetermined amount.

>>> Antony Tseng <Tseng.Antony@epamail.epa.gov>
2/23/2012 10:47 AM >>>
Barbara and Helen,

We wanted to bring you up to date from yesterday's call on our current findings and options to make sure we are both on the same page.

Using the PAT Tool, NJDEP and EPA have concluded:

1) Modeled concentrations of the Passaic River are sensitive to the boundary condition that is used. Using the same screening tool, the Hackensack River is not sensitive to the boundary condition.

2) Saddle River boundary load is NOT double-counted in the updated PAT Tool, this was confirmed by HydroQual.

3) The PAT Tool does not allow the Saddle River Boundary load to be adjusted. Therefore, we could not use the PAT Tool to determine if the Passaic River is sensitive to changes in the Saddle River boundary load. NJDEP is reviewing concentration and flow data from the Saddle River to see what boundary data is available help determine how sensitive the Passaic River is to changes in the Saddle River boundary loads.

After our discussion yesterday and discussion with HDR-HydroQual, we have identified four options that may be used to establish boundary loads for the Passaic River:

A) Stevens Modeling: Stevens Institute of Technology has been working on a Pathogen TMDL project for the

non-tidal Passaic. The area of study under the Stevens project is hydrologically adjacent to the NJ Harbor Pathogen TMDL work by Dundee Dam on the Passaic. The Stevens project is targeting E. Coli as the pollutant of concern while the NJ Harbor Pathogen TMDL is targeting Enterococci as the pollutant of concern. In order to better represent the variability of pathogen concentrations at Dundee Dam, this option would be to wait the Stevens modeling to provide enterococci and flow data at Dundee Dam to be used as an input to the NJ Harbor TMDL at the Passaic River as a variable boundary condition. This option also includes "translating" E. Coli concentrations to Enterococci concentrations at Dundee Dam.

B) Rainfall/Flow Response: This option would attempt to relate enterococci data from multiple years in the area of Dundee Dam to Rainfall/Flow. The relationship would then be imposed as the boundary condition for the Passaic River of the NJ Harbor TMDLs. If a relationship cannot be determined, another option would need to be pursued.

C) Monte Carlo-like: Ambient Enterococci data is not available at Dundee Dam for 2000 to 2003. This option would develop a variable boundary condition by grouping enterococci data from multiple years in the area of Dundee Dam and arranging them into a probability distribution and then transposing them to where the 35 geometric mean is being met. Concentrations will be selected randomly from the transposed group of Enterococci concentration in order to provide variability at the Passaic boundary of the NJ Harbor TMDLs.

D) Constant 35: This option would set the boundary condition of the NJ Harbor TMDLs at a constant concentration of 35 colonies/100 mL of Enterococci. This option is an assumption due to the lack of available data. The constant concentration of 35 colonies/100 mL meets the standard of the geometric mean of 35 colonies/100 mL at the boundary. Actual concentrations would be both over-estimated and under-estimated throughout the model time frame by setting the concentration constant, however the assumption is based on the boundary meeting the standard.

Please provide any feedback on the above recap.

Thanks,
- Antony

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wrote: -----To: "Helen Pang"
<Helen.Pang@dep.state.nj.us>, Rosella
OConnor/R2/USEPA/US@EPA
From: "Barbara Hirst" <Barbara.Hirst@dep.state.nj.us>
Date: 02/07/2012 08:05AM
Cc: Antony Tseng/R2/USEPA/US@EPA
Subject: Re: Sensitivity runs for Harbor Pathogen
TMDL

haven't gotten a final answer here yet, but for the sensitivity run, am I correct that the intent is to have a steady input of the selected value, in other words, in place of 35 all the time it would be 104 (or other selected value) all the time? Also, any details from Robin yet on the boundary input used for model calibration?

>>> Rosella OConnor <OConnor.Rosella@epamail.epa.gov>
2/6/2012 10:09 AM >>>
Hi Barbara and Helen:

Antony and I spoke to Robin regarding boundary assumptions and she will check and get back to us today.

Also, we are considering having the EPA contractor conduct a sensitivity run using the model for 2000 and 2003 at a boundary entero concentration of our choice at Passaic, Saddle, and Hackensack. The choice could be an order of magnitude higher such as 350/100mL. Another choice could be the single sample max (SSM) of 104/100mL. Using the SSM value we think produces a more informed model run on the affect of the boundary condition on the remainder of the Passaic and Hackensack. The thinking here is that whatever variability may exist, it should not exceed the SSM value.

Please let us know which boundary run you would agree to.

Thanks,
Rosella and Antony